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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/737,283 | 12/16/2003 | William H. Retsch JR. | 1902A1 | 6569 |

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PPG INDUSTRIES, INC.
Intellectual Property Department
One PPG Place
Pittsburgh, PA 15272

EXAMINER

WOODWARD, ANA LUCRECIA

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

1711

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|-------------------------------|--|
| Office Action Summary | Application No. 10/737,283 | Applicant(s) RETSCH ET AL. | |
| | Examiner Ana L. Woodward | Art Unit 1711 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on June 9, 2005
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-60 is/are pending in the application.
- 4a) Of the above claim(s) 2, 3, 6, 7, 10, 16-25, 27-30, 33, 34, 37, 43-58 and 60 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4, 5, 8, 9, 11-15, 26, 31, 32, 35, 36, 38-42 and 59 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>6/9/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I comprising the highly branched polyurethane derived from the monomers per claim 4 in the reply filed on June 9, 2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 2, 3, 6, 7, 10, 16-25, 27-30, 33, 34, 37, 43-58 and 60 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group or species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on June 9, 2005.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 8, 9, 11-15, 26, 35, 36, 38-42 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. 6,617,418 (Magnusson et al).

Magnusson et al disclose a hyperbranched dendritic polyether, which, optionally, is further processed, such as further chain extended, chain terminated and/or functionalized. The hyperbranched polyether is obtained from a reaction mixture comprising at least one oxetane and, optionally, one or more other monomeric or polymeric molecules (column 2, lines 15-43).

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Suitable chain extenders include lactones (column 3, line 47). In example 2, a reaction product (molecular weight 58,129) is produced by reacting a hyperbranched polyether (molecular weight 5,251) with caprolactone.

In essence, the disclosure of the reference differs from the present claims in not expressly exemplifying a hyperbranched polyether derived from two polyfunctional monomers and in not expressly disclosing the composition in powder form. With respect to the first difference, it would have been obvious to derive the hyperbranched polyether from more than one polyfunctional monomers because the reference clearly states that more than one oxetane and, optionally, one or more other monomeric or polymeric molecules can be used to prepare it. As to the second difference, it is maintained that it would have been obvious and within the purview of one having ordinary skill in the art to utilize the reference composition to its fullest extent and formulate it in powder form in accordance with the ultimate application and use desired. Accordingly, absent evidence of unusual or unexpected results, no patentability can be seen in the presently claimed subject matter.

Regarding the set of claims based on claim 26, the hyperbranched polyether of the reference can be further reacted with components reading on the presently claimed crosslinker (column 4, lines 12-24, etc.).

With respect to the amount of lactone grafts per claims 38 and 39, it is noted that said content would be realized given the excess amount of lactone used.

7. Claims 26, 35, 36, 38-42 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2004/0043152 A1 (Barsotti et al).

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Barsotti et al disclose coating compositions comprising a highly branched copolyester polyol and a crosslinking component. In various examples (2, 2A, 3, 3A, etc.), patentees use a highly branched copolyester, reading on the presently claimed compound (a), and a crosslinker, reading on the presently claimed component (b). Said highly branched copolyester is produced in stages by first polymerizing two polyfunctional monomers (said product corresponding to the present highly branched polymer having terminal functional groups) followed by polymerizing with a lactone (corresponding to the presently claimed lactone). The highly branched polymer has a molecular weight not exceeding 30,000 (column 2, [0030]).

In essence, the disclosure of the reference differs in essence from the above-rejected claims in not expressly disclosing the coating composition in powder form. It is reasonably maintained, however, that it would have been obvious and within the purview of one having ordinary skill in the art to have formulated the coating compositions in powder form in accordance with the ultimate application and use desired. Accordingly, absent evidence of unusual or unexpected results, no patentability can be seen in the presently claimed subject matter.

With respect to the amount of lactone grafts per claims 38 and 39, it is noted that said content would be realized given that the weight ratio of lactone monomer to hyper branching monomer can be up to 20/1 (column 3, [0038]).

8. Claims 1, 4, 5, 8, 9, 11-15, 26, 31, 32, 35, 36, 38-42 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. 6,376,637 (Bruchmann et al) in combination with U.S. 5,788,989 (Jansen et al).

Dendritic and highly branched polyurethanes derived from at least two polyfunctional monomers, reading on the presently claimed highly branched polymer, are well known in the art as disclosed by Bruchmann et al (column 2, lines 6-11, column 4, lines 36-47, etc.). The functional groups of said dendrimer can be further modified and/or chain extended (column 4, line 59 – column 5, line 3). Alkylene oxides are express examples of suitable chain extenders (column 5, lines 1-3). Bruchmann et al differs in essence from the presently claimed invention in neither expressly disclosing the use of a lactone nor a composition in powder form.

Jansen et al relates to dendrimer compositions in which an effective amount of the terminal groups are blocked with suitable reactants. Lactones are disclosed as suitable reactants (column 6, line 4).

It would have been obvious to one having ordinary skill in the art to have modified the polyurethane dendrimers of Bruchmann et al with a lactone component, as opposed to an alkylene oxide, because lactones and alkylene oxides are suitable alternative reactants for further modifying the terminal groups of dendrimers (Jansen et al column 5, line 59, column 6, line 4). Alternatively, it would have been obvious to one having ordinary skill in the art to have employed a polyurethane dendrimer, as taught by Bruchmann et al, in the composition of Jansen et al and further react it with a lactone. This is because Bruchmann et al clearly state that “all dendrimers can be used in the invention” (column 4, line 31).

As to the powder form limitation, it is maintained that it would have been obvious and within the purview of one having ordinary skill in the art to have formulated the compositions in powder form in accordance with the ultimate application and use desired. Accordingly, absent

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evidence of unusual or unexpected results, no patentability can be seen in the presently claimed subject matter.

Response to Arguments

9. Applicant's arguments filed June 9, 2005 have been fully considered and are persuasive to the extent that the 35 U.S.C. 112 rejection has been withdrawn.

Allowable Subject Matter

10. The indicated allowability of claims 5 and 32 is withdrawn in view of the newly discovered reference(s) applied hereinabove.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ana L. Woodward whose telephone number is (571) 272-1082. The examiner can normally be reached on Monday-Friday (8:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James J. Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Ana L. Woodward

Primary Examiner 1711